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## ABSTRACT

A beam parameter monitoring unit for coupling with a molecular fluorine ( $F_2$ ) or ArF laser resonator that produces an output beam having a wavelength below 200 nm includes a detector and a beam path enclosure. The unit may also include a beam splitter within the enclosure for separating the output beam into first and second components, or first and second beam are attained by other means. The detector measures at least one optical parameter of the second component of the output beam. The beam path enclosure includes one or more ports for purging the beam path enclosure with an inert gas to maintain the enclosure substantially free of sub-200 nm photoabsorbing species. An optical path of the second component of the output beam through the enclosure from the laser resonator to the detector is substantially free of sub-200 nm photoabsorbing species so that the second beam component reaches the detector without substantial attenuation from the photoabsorbing species, while the first component is used for processing a workpiece.